

claims the benefit of EP 90810367.4, filed May 18, 1990. Serial No. 07/991,237 is also a continuation-in-part of 07/775,989, filed November 20, 1991, now U.S. Patent No.

5,271,928, which claims the benefit of PCT/EP91/00620, filed April 2, 1991 and EP 90810262.7, filed April 2, 1990. Serial No. 08/380,588 is a continuation-in-part of Serial No. 08/128,540, filed September 29, 1993, now U.S. Patent No. 5,380,519, which is a division of Serial No. 07/775,989. This application claims the benefit of all of the aforementioned applications. --

IN THE CLAIMS

Cancel claims 19-49 and add the following new claims 50-97:

50. A contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas, said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids. --
51. A contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable gas that is a halogenated hydrocarbon, said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids. --
52. A contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is a freon, said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids.--
53. A contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising SF₆, said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids. --
54. A contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is C₄F₈, said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids. --

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- 55. A contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is C_4F_{10} , said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids. --
 - 56. A contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is CF_4 , said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids. --
 - 57. A contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is SF_6 , C_4F_8 , C_4F_{10} , or CF_4 , said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids.--
 - 58. A contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising a physiologically acceptable fluorinated gas and said microballoons comprising a polymer membrane wall. --
 - 59. A contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising a physiologically acceptable gas that is a halogenated hydrocarbon, and said microballoons comprising a polymer membrane wall. --
 - 60. A contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising a physiologically acceptable fluorinated gas that is a freon, and said microballoons comprising a polymer membrane wall. -
 - 61. A contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising SF_6 , and said microballoons comprising a polymer membrane wall. --
 - 62. A contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising C_4F_8 , and said microballoons comprising a polymer membrane wall. --
 - 63. A contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising C_4F_{10} , and said microballoons comprising a polymer membrane wall. --

-- 64. A contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising CF_4 , and said microballoons comprising a polymer membrane wall. --

-- 65. A contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising SF_6 , C_4F_8 , C_4F_{10} , or CF_4 , and said microballoons comprising a polymer membrane wall. --

-- 66. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas, said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids; and

ultrasonically imaging said subject. --

-- 67. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable gas that is a halogenated hydrocarbon, said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids; and

ultrasonically imaging said subject. --

-- 68. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is a freon, said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids; and

ultrasonically imaging said subject. --

-- 69. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising SF_6 , said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids; and --

ultrasonically imaging said subject.--

-- 70. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is C_4F_8 , said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids; and

ultrasonically imaging said subject. --

Dr. Smith
-- 71. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is C_4F_{10} , said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids; and

ultrasonically imaging said subject. --

-- 72. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is CF_4 , said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids; and

ultrasonically imaging said subject. --

-- 73. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is SF₆, C₄F₈, C₄F₁₀, or CF₄, said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids; and

ultrasonically imaging said subject. --

-- 74. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising a physiologically acceptable fluorinated gas and said microballoons comprising a polymer membrane wall; and

ultrasonically imaging said subject. --

-- 75. A method of ultrasonic imaging comprising:

administering a contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising a physiologically acceptable gas that is a halogenated hydrocarbon, and said microballoons comprising a polymer membrane wall; and

ultrasonically imaging said subject. --

-- 76. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising a physiologically acceptable fluorinated gas that is a freon, and said microballoons comprising a polymer membrane wall; and

ultrasonically imaging said subject. --

-- 77. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising SF₆, and said microballoons comprising a polymer membrane wall; and

ultrasonically imaging said subject.--

-- 78. "A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising C_4F_8 , and said microballoons comprising a polymer membrane wall; and

ultrasonically imaging said subject. --

-- 79. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising C_4F_{10} , and said microballoons comprising a polymer membrane wall; and

ultrasonically imaging said subject. --

-- 80. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising CF_4 , and said microballoons comprising a polymer membrane wall; and

ultrasonically imaging said subject. --

-- 81. A method of ultrasonic imaging comprising:

administering to a subject a contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising SF_6 , C_4F_8 , C_4F_{10} , or CF_4 , and said microballoons comprising a polymer membrane wall; and

ultrasonically imaging said subject. --

-- 82. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas, said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids, the method comprising:

forming the stabilized microbubbles in the presence of said gas. --

- 83. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable gas that is a halogenated hydrocarbon, said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids, the method comprising:

forming the stabilized microbubbles in the presence of said gas. --

- 84. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is a freon, said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids, the method comprising:

forming the stabilized microbubbles in the presence of said gas. --

- 85. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising SF_6 , said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids, the method comprising:

forming the stabilized microbubbles in the presence of said gas. --

- 86. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is C_4F_8 , said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids, the method comprising:

forming the stabilized microbubbles in the presence of said gas. --

- 87. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is C_4F_{10} , said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids, the method comprising:

forming the stabilized microbubbles in the presence of said gas. --

- 88. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is CF_4 , said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids, the method comprising:

forming the stabilized microbubbles in the presence of said gas. --

- 89. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of stabilized microbubbles, said stabilized microbubbles comprising a physiologically acceptable fluorinated gas that is SF_6 , C_4F_8 , C_4F_{10} , or CF_4 , said stabilized microbubbles being stabilized at least in part by a film-forming surfactant, and said film-forming surfactant comprising one or more phospholipids, the method comprising:

forming the stabilized microbubbles in the presence of said gas. --

- 90. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising a physiologically acceptable fluorinated gas and said microballoons comprising a polymer membrane wall, the method comprising:

forming the microballoons in the presence of at least one physiologically acceptable fluorinated gas or filling the microballoons with at least one physiologically acceptable fluorinated gas. --

- 91. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising a physiologically acceptable gas that is a halogenated hydrocarbon, and said microballoons comprising a polymer membrane wall, the method comprising

forming the microballoons in the presence of at least one physiologically acceptable fluorinated gas or filling the microballoons with at least one physiologically acceptable fluorinated gas. --

- 92. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising a physiologically acceptable fluorinated gas that is a freon, and said microballoons comprising a polymer membrane wall, the method comprising:

forming the microballoons in the presence of at least one physiologically acceptable fluorinated gas or filling the microballoons with at least one physiologically acceptable fluorinated gas.--

- 93. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising SF_6 , and said microballoons comprising a polymer membrane wall, the method comprising:

forming the microballoons in the presence of at least one physiologically acceptable fluorinated gas or filling the microballoons with at least one physiologically acceptable fluorinated gas.--

- 94. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising C_4F_8 , and said microballoons comprising a polymer membrane wall, the method comprising:

forming the microballoons in the presence of at least one physiologically acceptable fluorinated gas or filling the microballoons with at least one physiologically acceptable fluorinated gas. --

- 95. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising C_4F_{10} , and said microballoons comprising a polymer membrane wall, the method comprising:

forming the microballoons in the presence of at least one physiologically acceptable fluorinated gas or filling the microballoons with at least one physiologically acceptable fluorinated gas. --

- 96. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas comprising CF_4 , and said microballoons comprising a polymer membrane wall, the method comprising:

forming the microballoons in the presence of at least one physiologically acceptable fluorinated gas or filling the microballoons with at least one physiologically acceptable fluorinated gas. --

- 97. A method of making a contrast agent for ultrasonic echography, said contrast agent comprising an aqueous suspension of gas-filled microballoons, said gas